

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :
Edward A. BELBRUNO :
Serial No. unassigned : Group Art Unit:
Filed: herewith : Examiner:
For: LOW ENERGY METHOD FOR CHANGING THE INCLINATIONS OF ORBITING
SATELLITES USING WEAK STABILITY BOUNDARIES AND A COMPUTER
PROCESS FOR IMPLEMENTING SAME

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the documents listed on the attached form PTO-1449. It is respectfully requested that the documents be expressly considered during the prosecution of this application, and that the documents be made of record therein and appear among the "References Cited" on any patent to issue therefrom. Copies of any cited U.S. Patents and U.S. Patent Publications are not being submitted in accordance with 37 CFR 1.98(a)(2)(i).

This Information Disclosure Statement is being filed within three months of the U.S. filing date OR before the mailing date of a first Office Action on the merits. No certification or fee is required.

In accordance with 37 C.F.R. § 1.97(g) and (h), the filing of this IDS should not be construed as a representation that a search had been made or that information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56 (b), or that any cited document listed or attached is (or constitutes) prior art. Unless otherwise indicated, the date of

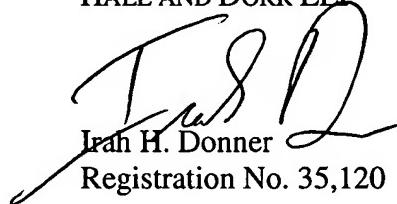
publication indicated for an item is taken from the face of the item, and Applicant reserves the right to prove that the date of publication is in fact different.

The references listed on Sheets 1 and 2 of Form PTO-1449 were cited by or submitted to the U.S. Patent and Trademark Office in parent application Serial No. 10/410,243, filed April 10, 2003, and Serial No. 09/849,273, filed May 7, 2001, which are relied upon for an earlier filing date under 35 USC § 120. Copies of these references are not attached under 37 CFR 1.98(d).

No certification or fee is required. However, the Commissioner is authorized to charge any deficiency in any fees pursuant to 37 CFR § 1.17 associated with this communication and to credit any excess payment to Deposit Account No. 08-0219.

Respectfully submitted,

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INFORMATION DISCLOSURE
CITATION IN AN
APPLICATION

(PTO-1449)

ATTY. DOCKET NO.
110347.302US4SERIAL NO.
Unassigned

APPLICANT

Edward A. BELBRUNO

FILING DATE
herewith

GROUP

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	6,059,233	05/09/00	Koppel et al.			12/30/97
	5,681,011	10/28/97	Frazier			08/24/93
	5,595,360	01/21/97	Spitzer			03/25/94
	5,568,904	10/29/96	Brock et al.			08/28/92
	5,507,454	04/16/96	Dulck			01/28/91
	5,506,780	04/09/96	Montenbruck et al.			10/23/92
	5,452,869	09/26/95	Basuthakur et al.			12/18/92
	5,433,726	07/18/95	Horstein et al.			05/28/92
	5,421,540	06/06/95	Ting			08/26/92
	5,199,672	04/06/93	King et al.			05/25/90
	5,163,640	11/17/92	Altobelli			12/14/90
	5,158,249	10/27/92	Uphoff			10/12/90
	5,120,008	06/09/92	Ramohalli			07/28/89
	6,067,672	11/26/91	Bouzat			04/24/90
	5,064,152	11/12/91	Maute			12/05/89
	4,618,112	10/21/86	Keigler			04/15/83
	T100,604	05/05/81	Crill et al.			01/29/79
	4,599,697	07/08/86	Chan et al.			08/11/82
	4,288,051	09/08/81	Goschel			04/19/79
	3,676,581	07/11/72	Swet			02/01/71
	3,532,298	10/06/70	Swet			10/31/67

EXAMINER

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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	03 April 2001, International Preliminary Examination Report from PCT/US98/08247.
	David, L., "The Future In Space Toll Roads", <i>space.com</i> , July 27, 2000 XP002161884.
	"AsiaSat Salvage Idea Originated Outside Hughes", <i>Space views</i> , online, January 16, 1998, XP002161885.
	Kawaguchi et al., "On Making Use of Lunar and Solar Gravity Assists in Lunar-A, Planet-B Missions", <i>Acta Astronautica</i> , 1995, Vol. 35, Nos. 9-10, pp. 633-642.
	Belbruno, E., "Ballistic Lunar Capture Transfers Using the Fuzzy Boundary and Solar Perturbations: A Survey", <i>Journal of the British Interplanetary Society</i> , Vol. 47, No. 2, February 1994, pp. 73-80.
	Belbruno, E., "The Dynamical Mechanism of Ballistic Lunar Capture Transfers in the Four-Body Problem From the Perspective of Invariant Manifolds and Hills Regions", <i>The Geometry Center; University of Minnesota</i> , 1994, No. 270, pp. 1-24.
	Belbruno, E. A., J. K. Miller, "Sun-Perturbed Earth-to-Moon Transfers with Ballistic Capture", <i>Journal of Guidance, Control and Dynamics</i> , August 1993, Volume 16, No.4, pp. 770-775.
	Graziani, F., M. M. Castronuovo, and P. Teofilatto, "Geostationary Orbits from Mid-Latitude Launch Sites Via Lunar Gravity Assist," An American Astronautical Society Publication reprinted from <i>Spaceflight Dynamics</i> , 1993, Vol. 84, pp. 561-572.
	Krish V., E. A. Belbruno, W. M. Hollister, "An Investigation into Critical Aspects of a New Form of Low Energy Lunar Transfer, the Belbruno-Miller Trajectories", 1992 AIAA Astrodynamics Conference, 10-12 August 1992, pp. 435-444.
	Miller, J. K., E. A. Belbruno, "A Method for the Construction of a Lunar Transfer Trajectory Using Ballistic Capture, AAS Paper 91-100", AAS/AIAA Annual Spacelight Mechanics Meeting, Vol. 1, 11-13, February 1991, pp. 97-108.
	Cook et al., "Return to the Moon: The Lunar Observer Mission", <i>Jet Propulsion Laboratory, California Institute of Technology</i> , 1990, pp. 232-245.
	Yamakawa et al., "On Earth-Moon Transfer Trajectory with Gravitational Capture", <i>The Institute of Space and Astronautical Science</i> , pp. 1-20.
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